

PATENT ABSTRACTS OF JAPAN

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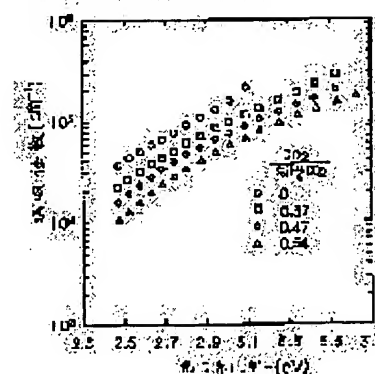
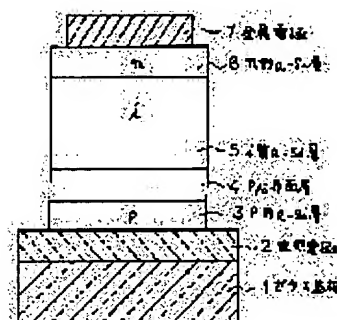
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(54) FORMATION OF SILICON OXIDE SEMICONDUCTOR FILM

(57)Abstract:

PURPOSE: To industrially form a silicon oxide semiconductor film having a low light absorption coefficient and high photoconductivity by resolving a gaseous raw material which contains at least SiH₄, CO₂, and H₂ in a state where CO₂/(SiH₄+CO₂) becomes a specific value.

CONSTITUTION: In the method which is used for forming an SiO semiconductor film composed of a-SiO₂ containing a microcrystalline layer of Si, the SiO semiconductor film is formed by resolving a gaseous raw material which contains at least SiH₄, CO₂, and H₂ in a state where CO₂/(SiH₄+CO₂) becomes ≤ 0.6 . At the time of decomposing the mixed gas, it is effective to generate glow discharge in the gas at a high-frequency power density of $\geq 40\text{mW/cm}^2$. The formed SiO semiconductor film has a absorption coefficient $\leq 106\text{cm}^{-1}$ against light having a wavelength of $\geq 340\text{nm}$ and photoconductivity of $\geq 10^{-6}\text{S/cm}$. In addition, it is effective, to use a p-type a-SiO layer 3 or n-type a-Si layer 6 obtained by mixing a doping gas with the gaseous raw material as the window layer of a solar battery.



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